

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A gallium nitride compound semiconductor light-emitting device comprising a substrate, an n-type semiconductor layer provided atop the substrate, a light-emitting layer provided atop the n-type semiconductor layer, a p-type semiconductor layer provided atop the light-emitting layer, a negative electrode provided in contact with the n-type semiconductor layer, and a positive electrode provided in contact with the p-type semiconductor layer, the n-type semiconductor layer, the light-emitting layer and the p-type semiconductor layer being composed of a gallium nitride compound semiconductor, wherein

the positive electrode includes at least a contact metal layer which is in contact with the p-type semiconductor layer,

the contact metal layer comprises at least one metal selected from the group consisting of Pt, Ir, Rh, Pd, Ru, Re, and Os, or an alloy containing said at least one metal, and

the surface portion of the p-type semiconductor layer on the positive electrode side includes a positive-electrode-metal-containing layer that contains at least one metal selected from the group consisting of Pt, Ir, Rh, Pd, Ru, Re, and Os, the positive-electrode-metal-containing layer having a thickness of 1 to 8 nm, and

the surface portion of the contact metal layer on the p-type semiconductor layer side includes a semiconductor-metal-containing layer that contains a Group III metal at a

concentration of 1 to 20 at.% with respect to the total amount of metal atoms contained in the semiconductor-metal-containing layer, and

wherein the semiconductor-metal-containing layer has a thickness of 1 to 3 nm.

2. (canceled).

3. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 1, wherein the positive-electrode-metal-containing layer contains at least one metal selected from the group consisting of Pt, Ir, Rh, Pd, Ru, Re, and Os at a concentration of 0.01 to 30 at.% with respect to the total amount of metal atoms contained in the positive-electrode-metal-containing layer.

4. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 1, wherein the positive electrode includes a reflecting layer on the contact metal layer, the reflecting layer comprising at least one metal selected from the group consisting of Pt, Ir, Rh, Pd, Ru, Re, Os, and Ag, or an alloy containing said at least one metal.

5. (original): A gallium nitride compound semiconductor light-emitting device according to claim 4, wherein the reflecting layer has a columnar crystal structure.

6. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 4, wherein the contact metal layer has a thickness of 1 to 30 nm.

7. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 4, wherein the reflecting layer has a thickness of 30 to 500 nm.

8. (canceled).

9. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 1, wherein the semiconductor-metal-containing layer further contains a nitrogen atom.

10. (canceled).
11. (canceled).
12. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 1, wherein the contact metal layer comprises Pt.
13. (original): A gallium nitride compound semiconductor light-emitting device according to claim 12, wherein the contact metal layer has a Pt(222) plane spacing of 1.130 Å or less.
14. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 1, wherein the contact metal layer is formed through RF discharge sputtering.
15. (previously presented): A gallium nitride compound semiconductor light-emitting device according to claim 4, wherein the contact metal layer is formed through RF discharge sputtering, and the reflecting layer is formed through DC discharge sputtering.
16. (withdrawn-currently amended): A method for producing a gallium nitride compound semiconductor light-emitting device ~~according to claim 1, wherein~~ comprising a substrate, an n-type semiconductor layer provided atop the substrate, a light-emitting layer provided atop the n-type semiconductor layer, a p-type semiconductor layer provided atop the light-emitting layer, a negative electrode provided in contact with the n-type semiconductor layer, and a positive electrode provided in contact with the p-type semiconductor layer, the n-type semiconductor layer, the light-emitting layer and the p-type semiconductor layer being composed of a gallium nitride compound semiconductor, wherein
the positive electrode includes at least a contact metal layer which is in contact with the p-type semiconductor layer,

the contact metal layer comprises at least one metal selected from the group consisting of Pt, Ir, Rh, Pd, Ru, Re, and Os, or an alloy containing said at least one metal, and

the surface portion of the p-type semiconductor layer on the positive electrode side includes a positive-electrode-metal-containing layer that contains at least one metal selected from the group consisting of Pt, Ir, Rh, Pd, Ru, Re, and Os, the positive-electrode-metal-containing layer having a thickness of 1 to 8 nm, and

the surface portion of the contact metal layer on the p-type semiconductor layer side includes a semiconductor-metal-containing layer that contains a Group III metal at a concentration of 1 to 20 at.% with respect to the total amount of metal atoms contained in the semiconductor-metal-containing layer, and

wherein the semiconductor-metal-containing layer has a thickness of 1 to 3 nm,

which method comprises maintaining the gallium nitride compound semiconductor light-emitting device~~is maintained~~ at a temperature of 350°C or less after a step of forming the contact metal layer.